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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
SALVITTI, MICHAEL A				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/566,653

Applicant(s)

CHOWDHRY ET AL.

Examiner

MICHAEL A. SALVITTI

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10: Claim 10 is indefinite. In light of claim 1, it is indefinite whether the ligand compounds Ia and Ib are used separately or as a combination. For the purposes of further examination, the claim will be treated as a mixture of Ia and Ib are reacted in situ.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-6, 8-9, 11, 13 and 15-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Macromolecules **2003**, 36(18) 6711-6715 to *Bauers et al.*

Regarding claim 1: *Bauers* teaches a process for the preparation of an aqueous polymer dispersion comprising at least one olefin (ethylene/butene; see Abstract) in the

presence of a polymerization catalyst (see Abstract) and one emulsifier (surfactant; see Scheme 3, page 6712). The catalyst is prepared *in situ* via reacting a chlorobenzoquinone (2,6-dichloro-1,4-benzoquinone and 2,3,5-trichloro-benzoquinone) with a phosphine compound (triphenylphosphine) and a metal compound of the formula $M(L^2)_2$ (bis-1,5-cyclooctadiene nickel; see page 6711 "Catalyst Synthesis"). The polymerization is effected in an aqueous medium which comprises at least 50% by volume of water (95 mL water, 1 mL methanol, 5 mL toluene, 0.3 mL hexadecane; see Table 2 footer).

Regarding claim 2: *Bauers* teaches a process wherein the polymerization is effected under conditions of an aqueous miniemulsion polymerization (page 6712 "Polymerization").

Regarding claim 3: *Bauers* teaches a process wherein the polymerization is effected in the presence of an anionic emulsifier (sodium dodecyl sulfate; page 6713, right hand column).

Regarding claim 4: *Bauers* teaches a process wherein the polymerization is effected in the presence of ethylene (see 5th column of Table 2 on page 6713).

Regarding claim 5: *Bauers* teaches a process wherein at least one further olefin is used (1-butene and 1-octene are taught in the last paragraph of 6713).

Regarding claim 6: *Bauers* teaches a process wherein only ethylene is used for the polymerization (Table 2).

Regarding claim 8: *Bauers* teaches a process wherein ligand compound Ia is used to produce the polymerization catalyst (Table 2, DCBQ).

Regarding claim 9: *Bauers* teaches a process wherein ligand compound Ib is used to produce the polymerization catalyst (Table 2, TriCBQ).

Regarding claim 11: *Bauers* teaches a process wherein triphenylphosphine is used to produce the catalyst (page 6711 "Catalyst Synthesis" ¶1).

Regarding claim 13: *Bauers* teaches a process wherein the metal compound comprises Ni(COD)₂ (page 6711, "Catalyst Synthesis" ¶1).

Regarding claims 15-17: *Bauers* teaches a process wherein the polyethylene is linear, as determined by ¹H-NMR and ¹³C-NMR spectroscopy (page 6714, "Polymer and Latex Properties"). This suggests no branching.

Regarding claim 18: *Bauers* teaches a process wherein the aqueous polymer dispersion has a solids content higher than the one obtained using 2,3,5,6-tetrachloro-para-benzoquinone (DCBQ 28.0% vs. TetraCBQ 6.9%; Table 2, page 6713).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Claim***
rejected under 35 U.S.C. 103(a) as being unpatentable over Macromolecules **2003**,
36(18) 6711-6715 to *Bauers et al.*

Regarding claim 10: *Bauers* teaches a process according to claim 1, wherein ligand compounds Ia or Ib are used (see Table 2, page 6713). *Bauers* is silent regarding using Ia and Ib. However, both compounds are similar structural analogs, taught by the prior art, useful for the same purpose. "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP § 2144.06.

Claims 7, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macromolecules **2003**, 36(18) 6711-6715 to *Bauers et al.* as applied to claim 1 above in view of DE10234005.6. to *Chowdhry et al.* The English equivalent of DE10234005.6, US 2005/0261452, will be referred to in support of the following rejections.

Regarding claim 7: *Bauers* teaches the process of claim 1, as set forth above.

Bauers is silent regarding the process wherein G is C₁-C₁₂ alkylene, C₃-C₁₂ cycloalkylene, C₇-C₁₅-alkylene or C₆-C₁₄ arylene. *Chowdhry* '452 teaches a process wherein G is a C₁-C₁₂ alkylene, C₃-C₁₂ cycloalkylene, C₇-C₁₅-alkylene or C₆-C₁₄ arylene (see ¶ [0011]). The prior art fails to disclose an anticipatory example. However, a finite number of components of the composition are described in the reference, setting forth a predictable solution with a reasonable expectation of success. See MPEP § 2142. At

the time of the invention, it would have been obvious to a person having ordinary skill in the art to try a diphosphine, as taught by *Chowdhry '452*, with the invention of *Bauers*. The motivation in doing so would be to enhance the chelation of the nickel (*Chowdhry '452* ¶ [0029]), with the expectation of producing a catalyst which is more water-resistant.

Regarding claims 12 and 14: *Bauers* teaches the process of claim 1, as set forth above. *Bauers* is silent regarding the process wherein a tetramethylenediamine catalyst, namely $\text{Ni}(\text{CH}_3)_2(\text{TMEDA})$ is used. *Chowdhry '452* teaches a method where $\text{Ni}(\text{CH}_3)_2(\text{TMEDA})$ is a preferred metal compound (¶ [0102]). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try $\text{Ni}(\text{CH}_3)_2(\text{TMEDA})$, with the motivation of optimizing the conditions of the reaction with regard to water sensitivity (*Chowdhry '452* ¶ [0106]).

Response to Arguments

A) Any rejections and/or objections made in the previous Office Action and not repeated, are hereby withdrawn.

B) Applicant's arguments, see "Remarks", pages 7-10, filed 2/10/2009, with respect to the rejection(s) of claim(s) 1-6 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *Bauers Macromolecules* 2003, as discussed above.

C) Applicant's arguments, see pages with respect to differences and unexpected results between the instant claims and issued patent US 7,417,098 have been fully considered and are persuasive. The nonstatutory obviousness-type double patenting rejection of claims 1-6 has been withdrawn.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday-Thursday 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/M. A. S./
Examiner, Art Unit 1796